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# HN27C4096AG/ACC Series

262144-word × 16-bit CMOS UV Erasable and Programmable  
ROM

# HITACHI

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## Description

The Hitachi HN27C4096AG/ACC is a 4-Mbit ultraviolet erasable and electrically programmable ROM, featuring high speed and low power dissipation. Fabricated on advanced fine process and high speed circuitry technique, the HN27C4096A makes high speed access time possible. Therefore, it is suitable for 16-bit microcomputer systems using high speed microcomputer such as the 80286 and 68020. The HN27C4096A offers high speed programming using page programming mode. This device has the package variation of cerdip-40pin and JLCC-44pin.

## Features

- High speed: Access time 100 ns/120 ns/150 ns (max)
- Low power dissipation:
  - Standby mode; 5  $\mu$ W (typ)
  - Active mode; 35 mW/MHz (typ)
- Fast high reliability page programming and fast high-reliability programming
  - Programming voltage; +12.5 V D.C.
  - Program time; 3.5 sec (min) (Theoretical in Page programming)
- Inputs and outputs TTL compatible during both read and program modes
- Pin arrangement: 40-pin JEDEC standard
  - 44-pin JLCC JEDEC standard
- Device identifier mode: Manufacturer code and device code
- Fully compatible with the HN27C4096G/CC Series

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## HN27C4096AG/ACC Series

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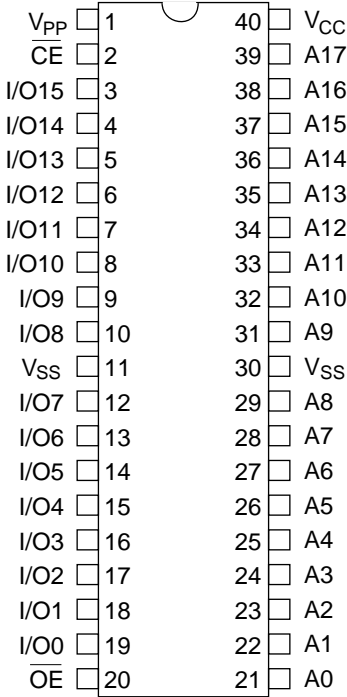
### Ordering Information

Type No.	Access Time	Package
HN27C4096AG-10	100 ns	600-mil 40-pin cerdip (DG-40A)
HN27C4096AG-12	120 ns	
HN27C4096AG-15	150 ns	
HN27C4096ACC-10	100 ns	44-pin J-bend leaded chip carrier (CC-44)
HN27C4096ACC-12	120 ns	
HN27C4096ACC-15	150 ns	

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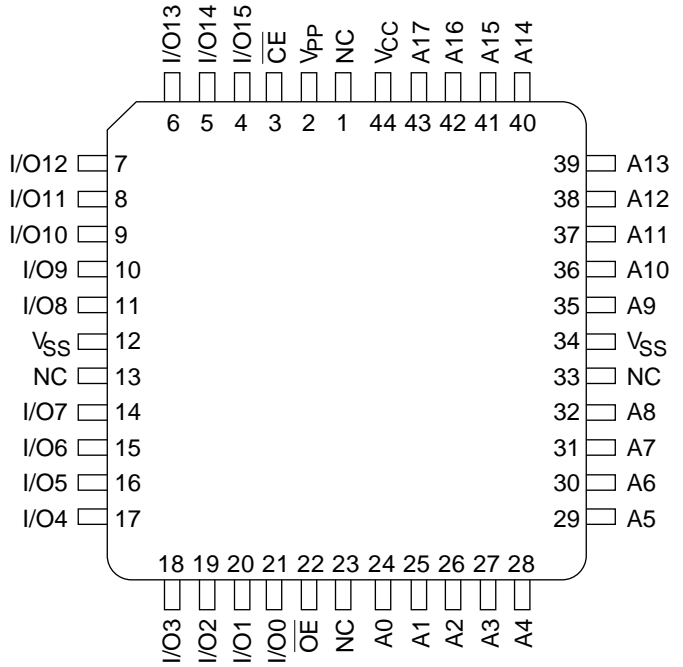
## Pin Arrangement

HN27C4096AG Series



(Top view)

HN27C4096ACC Series

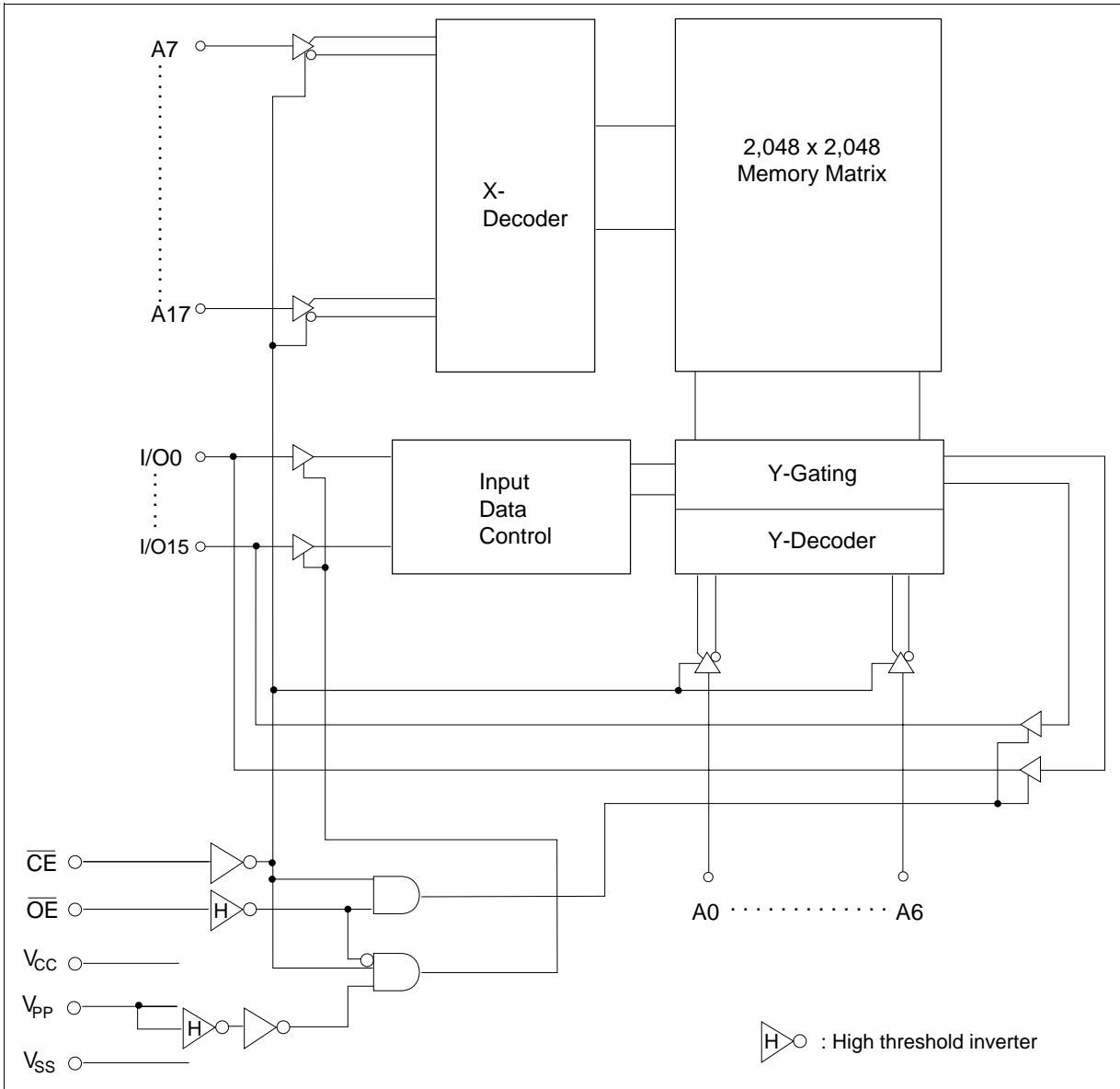


(Top view)

## Pin Description

Pin Name	Function
A0 – A17	Address
I/O0 – I/O15	Input/output
$\overline{\text{CE}}$	Chip enable
$\overline{\text{OE}}$	Output enable
V <sub>CC</sub>	Power supply
V <sub>PP</sub>	Programming power supply
V <sub>SS</sub>	Ground

## Block Diagram



Mode Selection

	Pin	$\overline{CE}$	$\overline{OE}$	A9	$V_{PP}$	$V_{CC}$	I/O
	<b>CC-44</b>	<b>(3)</b>	<b>(22)</b>	<b>(35)</b>	<b>(2)</b>	<b>(44)</b>	<b>(4 – 11, 14 – 21)</b>
<b>Mode</b>	<b>DG-40A</b>	<b>(2)</b>	<b>(20)</b>	<b>(31)</b>	<b>(1)</b>	<b>(40)</b>	<b>(3 – 10, 12 – 19)</b>
Read		$V_{IL}$	$V_{IL}$	X	$V_{SS} - V_{CC}$	$V_{CC}$	Dout
Output disable		$V_{IL}$	$V_{IH}$	X	$V_{SS} - V_{CC}$	$V_{CC}$	High-Z
Standby		$V_{IH}$	X	X	$V_{SS} - V_{CC}$	$V_{CC}$	High-Z
Page program	Page program set	$V_{IH}$	$V_H^{*2}$	X	$V_{PP}$	$V_{CC}$	High-Z
	Page data latch	$V_{IL}$	$V_H^{*2}$	X	$V_{PP}$	$V_{CC}$	Din
	Page program	$V_{IL}$	$V_{IH}$	X	$V_{PP}$	$V_{CC}$	High-Z
	Page program verify	$V_{IH}$	$V_{IL}$	X	$V_{PP}$	$V_{CC}$	Dout
	Page program reset	$V_{IH}$	$V_{IH}$	X	$V_{CC}$	$V_{CC}$	High-Z
Word program	Program	$V_{IL}$	$V_{IH}$	X	$V_{PP}$	$V_{CC}$	Din
	Program verify	$V_{IH}$	$V_{IL}$	X	$V_{PP}$	$V_{CC}$	Dout
	Optional verify	$V_{IL}$	$V_{IL}$	X	$V_{PP}$	$V_{CC}$	Dout
	Program inhibit	$V_{IH}$	$V_{IH}$	X	$V_{PP}$	$V_{CC}$	High-Z
Identifier		$V_{IL}$	$V_{IL}$	$V_H^{*2}$	$V_{SS} - V_{CC}$	$V_{CC}$	Code

- Notes: 1. X: Don't care.  
 2.  $V_H$ : 12.0 V  $\pm$  0.5 V

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
All input and output voltages <sup>1</sup>	$V_{in}, V_{out}$	-0.6 <sup>2</sup> to +7.0	V
Voltage on pin A9 and $\overline{OE}$	$V_{ID}$	-0.6 <sup>2</sup> to +13.0	V
$V_{PP}$ voltage <sup>1</sup>	$V_{PP}$	-0.6 to +13.5	V
$V_{CC}$ voltage <sup>1</sup>	$V_{CC}$	-0.6 to +7.0	V
Operating temperature range	$T_{opr}$	0 to +70	°C
Storage temperature range <sup>3</sup>	$T_{stg}$	-65 to +125	°C
Storage temperature under bias	$T_{bias}$	-20 to +80	°C

- Notes: 1. Relative to  $V_{SS}$ .  
 2.  $V_{in}, V_{out}, V_{ID}$  min = -2.0 V for pulse width  $\leq$  20 ns  
 3. Storage temperature range of device before programming.

## HN27C4096AG/ACC Series

### Capacitance ( $T_a = 25^\circ\text{C}$ , $f = 1\text{ MHz}$ )

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Input capacitance	$C_{in}$	—	—	12	pF	$V_{in} = 0\text{ V}$
Output capacitance	$C_{out}$	—	—	20	pF	$V_{out} = 0\text{ V}$

### Read Operation

#### DC Characteristics ( $V_{CC} = 5\text{ V} \pm 10\%$ , $V_{PP} = V_{SS}$ to $V_{CC}$ , $T_a = 0$ to $+70^\circ\text{C}$ )

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Input leakage current	$I_{LI}$	—	—	2	$\mu\text{A}$	$V_{in} = 5.5\text{ V}$
Output leakage current	$I_{LO}$	—	—	2	$\mu\text{A}$	$V_{out} = 5.5\text{ V}/0.45\text{ V}$
$V_{PP}$ current	$I_{PP1}$	—	1	20	$\mu\text{A}$	$V_{PP} = 5.5\text{ V}$
Standby $V_{CC}$ current	$I_{SB1}$	—	—	1	mA	$\overline{CE} = V_{IH}$
	$I_{SB2}$	—	1	20	$\mu\text{A}$	$\overline{CE} = V_{CC} \pm 0.3\text{ V}$
Operating $V_{CC}$ current	$I_{CC1}$	—	—	30	mA	$I_{out} = 0\text{ mA}$ , $f = 1\text{ MHz}$
	$I_{CC2}$	—	—	100	mA	$I_{out} = 0\text{ mA}$ , $f = 10\text{ MHz}$
Input voltage	$V_{IL}$	$-0.3^{11}$	—	0.8	V	
	$V_{IH}$	2.2	—	$V_{CC}+1^{12}$	V	
Output voltage	$V_{OL}$	—	—	0.45	V	$I_{OL} = 2.1\text{ mA}$
	$V_{OH}$	2.4	—	—	V	$I_{OH} = -400\text{ }\mu\text{A}$

Notes: 1.  $V_{IL}$  min =  $-1.0\text{ V}$  for pulse width  $\leq 50\text{ ns}$

$V_{IL}$  min =  $-2.0\text{ V}$  for pulse width  $\leq 20\text{ ns}$

2.  $V_{IH}$  max =  $V_{CC} + 1.5\text{ V}$  for pulse width  $\leq 20\text{ ns}$

If  $V_{IH}$  is over the specified maximum value, read operation cannot be guaranteed.

**AC Characteristics** ( $V_{CC} = 5\text{ V} \pm 10\%$ ,  $V_{PP} = V_{SS}$  to  $V_{CC}$ ,  $T_a = 0$  to  $+70^\circ\text{C}$ )

## Test Conditions

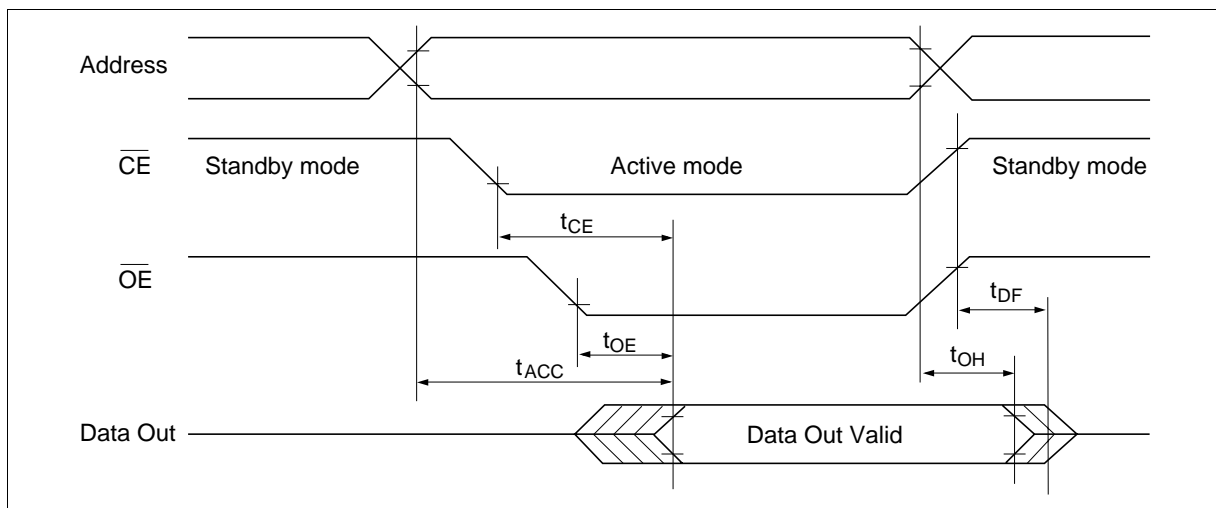
- Input pulse levels: 0.45 to 2.4 V
- Input rise and fall time:  $\leq 10$  ns
- Output load: 1 TTL gate +100 pF
- Reference levels for measuring timing: 0.8 V, 2.0 V

**HN27C4096A**

Parameter	Symbol	-10		-12		-15		Unit	Test Conditions
		Min	Max	Min	Max	Min	Max		
Address to output delay	$t_{ACC}$	—	100	—	120	—	150	ns	$\overline{CE} = \overline{OE} = V_{IL}$
$\overline{CE}$ to output delay	$t_{CE}$	—	100	—	120	—	150	ns	$\overline{OE} = V_{IL}$
$\overline{OE}$ to output delay	$t_{OE}$	—	60	—	60	—	70	ns	$\overline{CE} = V_{IL}$
$\overline{OE}$ high to output float*1	$t_{DF}$	0	35	0	40	0	50	ns	$\overline{CE} = V_{IL}$
Address to output hold	$t_{OH}$	5	—	5	—	5	—	ns	$\overline{CE} = \overline{OE} = V_{IL}$

Note: 1.  $t_{DF}$  is defined as the time at which the output achieves the open circuit condition and data is no longer driven.

## Read Timing Waveform



### Fast High-Reliability Page Programming

This device can be applied the high performance page programming algorithm shown in the following flowchart. This algorithm allows to obtain faster programming time without any voltage stress to the device nor deterioration in reliability of programmed data.

#### Page Program Set

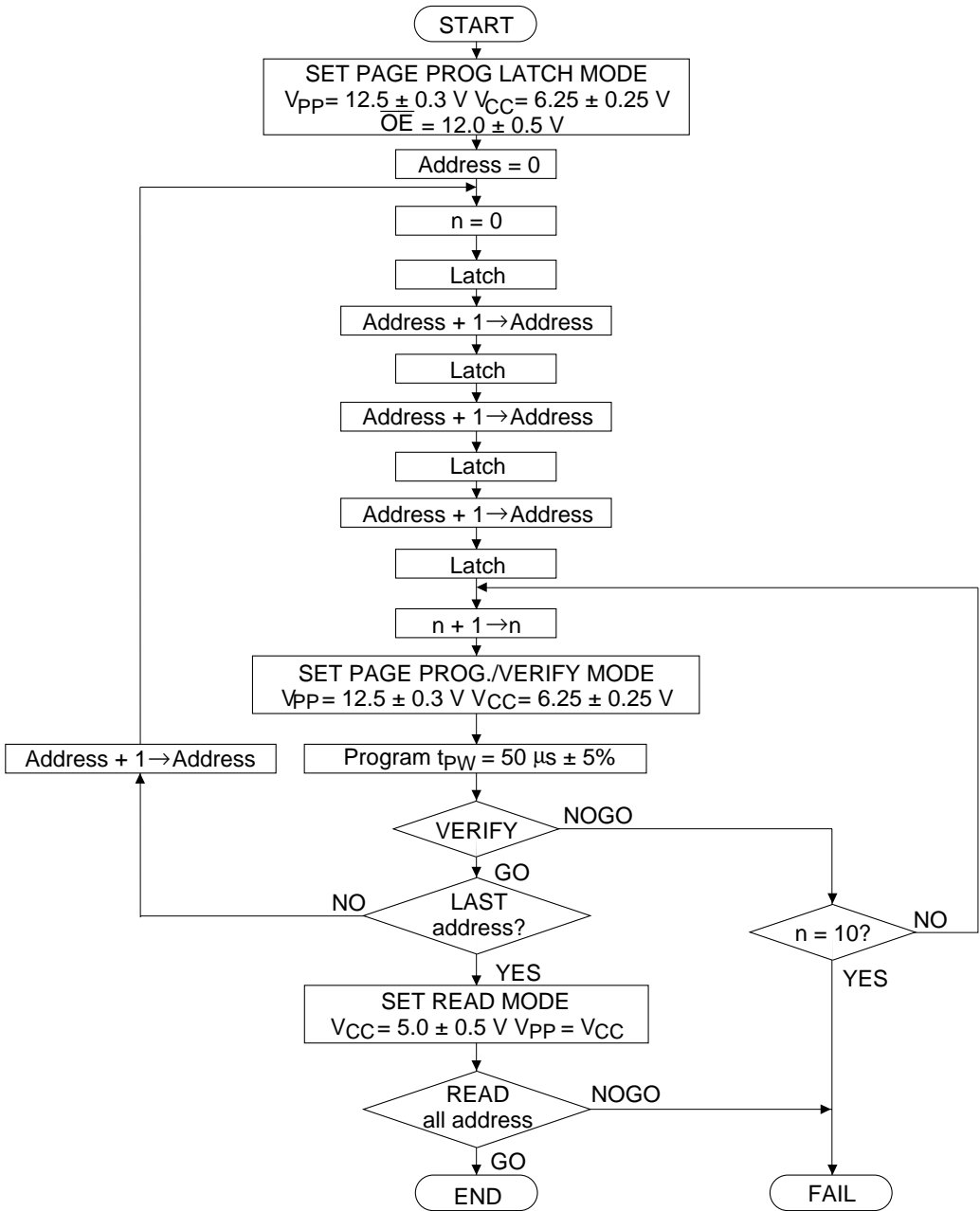
Apply 12 V to  $\overline{\text{OE}}$  pin after applying 12.5 V to  $V_{\text{pp}}$  to set a page program mode.

The device operates in a page program mode until reset.



Page Program Reset

Set  $V_{PP}$  to  $V_{CC}$  level or less to reset a page program mode.



Fast High-Reliability Page Programming Flowchart

## HN27C4096AG/ACC Series

**DC Characteristics** ( $V_{CC} = 6.25 \text{ V} \pm 0.25 \text{ V}$ ,  $V_{PP} = 12.5 \text{ V} \pm 0.3 \text{ V}$ ,  $T_a = 25^\circ\text{C} \pm 5^\circ\text{C}$ )

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Input leakage current	$I_{LI}$	—	—	2	$\mu\text{A}$	$V_{in} = 6.5 \text{ V}/0.45 \text{ V}$
Output voltage during verify	$V_{OL}$	—	—	0.45	V	$I_{OL} = 2.1 \text{ mA}$
	$V_{OH}$	2.4	—	—	V	$I_{OH} = -400 \mu\text{A}$
Operating $V_{CC}$ current	$I_{CC}$	—	—	50	mA	
Input voltage	$V_{IL}$	$-0.1^{*5}$	—	0.8	V	
	$V_{IH}$	2.2	—	$V_{CC}+0.5^{*6}$	V	
	$V_H$	11.5	12.0	12.5	V	
$V_{PP}$ supply current	$I_{PP}$	—	—	70	mA	$\overline{CE} = V_{IL}$

- Notes:
1.  $V_{CC}$  must be applied before  $V_{PP}$  and removed after  $V_{PP}$ .
  2.  $V_{PP}$  must not exceed 13 V including overshoot.
  3. An influence may be had upon device reliability if the device is installed or removed while  $V_{PP} = 12.5 \text{ V}$ .
  4. Do not alter  $V_{PP}$  either  $V_{IL}$  to 12.5 V or 12.5 V to  $V_{IL}$  when  $\overline{CE} = \text{low}$ .
  5.  $V_{IL} \text{ min} = -0.6 \text{ V}$  for pulse width  $\leq 20 \text{ ns}$ .
  6. If  $V_{IH}$  is over the specified maximum value, programming operation cannot be guaranteed.

**AC Characteristics** ( $V_{CC} = 6.25 \text{ V} \pm 0.25 \text{ V}$ ,  $V_{PP} = 12.5 \text{ V} \pm 0.3 \text{ V}$ ,  $T_a = 25^\circ\text{C} \pm 5^\circ\text{C}$ )

**Test Conditions**

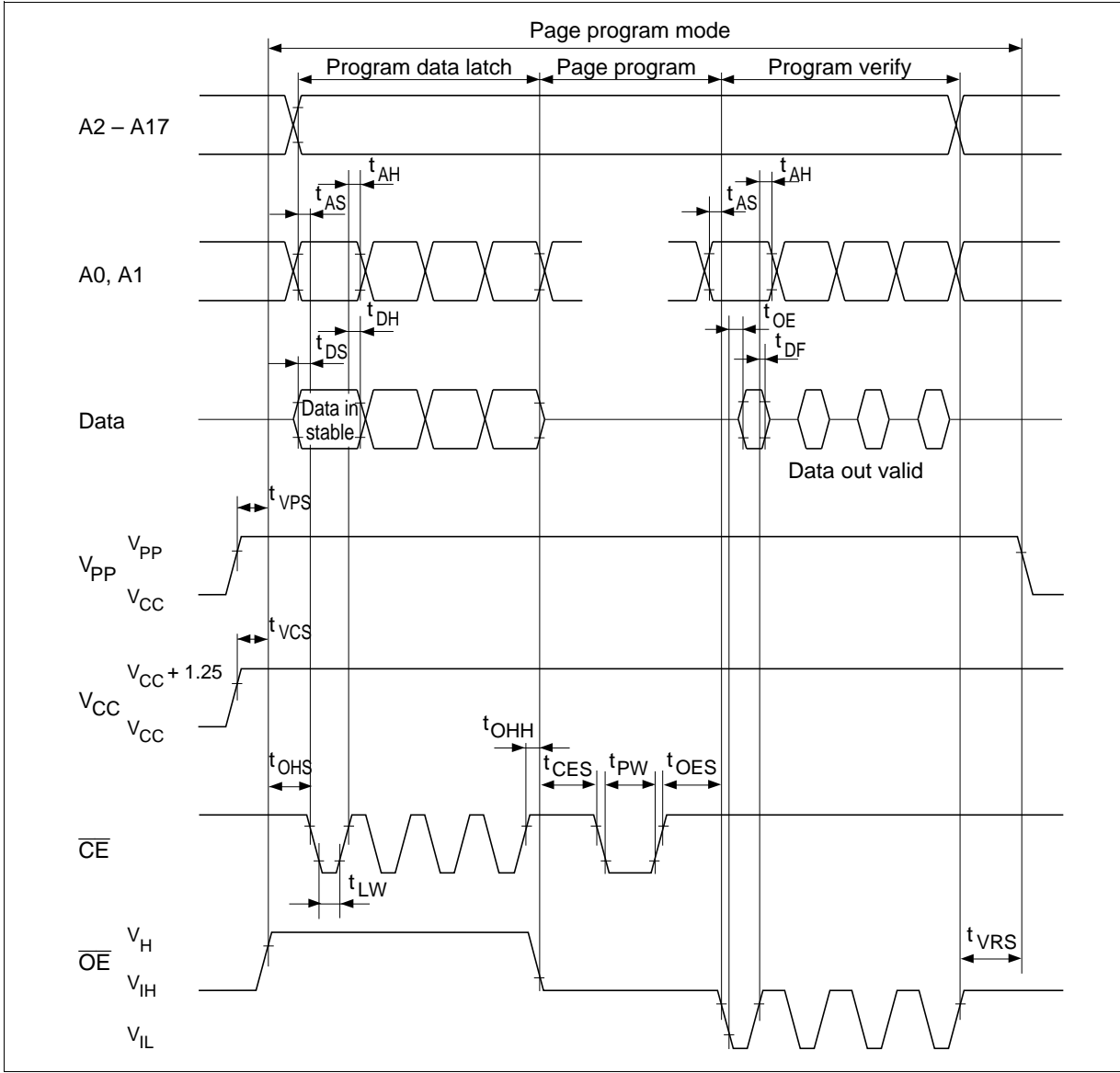
- Input pulse levels: 0.45 to 2.4 V
- Input rise and fall time:  $\leq 20 \text{ ns}$
- Reference levels for measuring timing:  
Inputs; 0.8 V, 2.0 V,  
Outputs; 0.8 V, 2.0 V

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Address setup time	$t_{AS}$	2	—	—	$\mu\text{s}$	
$\overline{OE}$ setup time	$t_{OES}$	2	—	—	$\mu\text{s}$	
Data setup time	$t_{DS}$	2	—	—	$\mu\text{s}$	
Address hold time	$t_{AH}$	0	—	—	$\mu\text{s}$	
Data hold time	$t_{DH}$	2	—	—	$\mu\text{s}$	
$\overline{OE}$ high to output float delay	$t_{DF}^{*1}$	0	—	130	ns	
$V_{PP}$ setup time	$t_{VPS}$	2	—	—	$\mu\text{s}$	
$V_{CC}$ setup time	$t_{VCS}$	2	—	—	$\mu\text{s}$	
$\overline{CE}$ programming pulse width	$t_{PW}$	47.5	50.0	52.5	$\mu\text{s}$	
$\overline{CE}$ setup time	$t_{CES}$	2	—	—	$\mu\text{s}$	
Data valid from $\overline{OE}$	$t_{OE}$	0	—	150	ns	
$\overline{CE}$ pulse width during data latch	$t_{LW}$	1	—	—	$\mu\text{s}$	
$\overline{OE} = V_H$ setup time	$t_{OHS}$	2	—	—	$\mu\text{s}$	
$\overline{OE} = V_H$ hold time	$t_{OHH}$	2	—	—	$\mu\text{s}$	
$V_{PP}$ hold time <sup>*2</sup>	$t_{VRS}$	1	—	—	$\mu\text{s}$	

Notes: 1.  $t_{DF}$  is defined as the time at which the output achieves the open circuit condition and data is no longer driven.

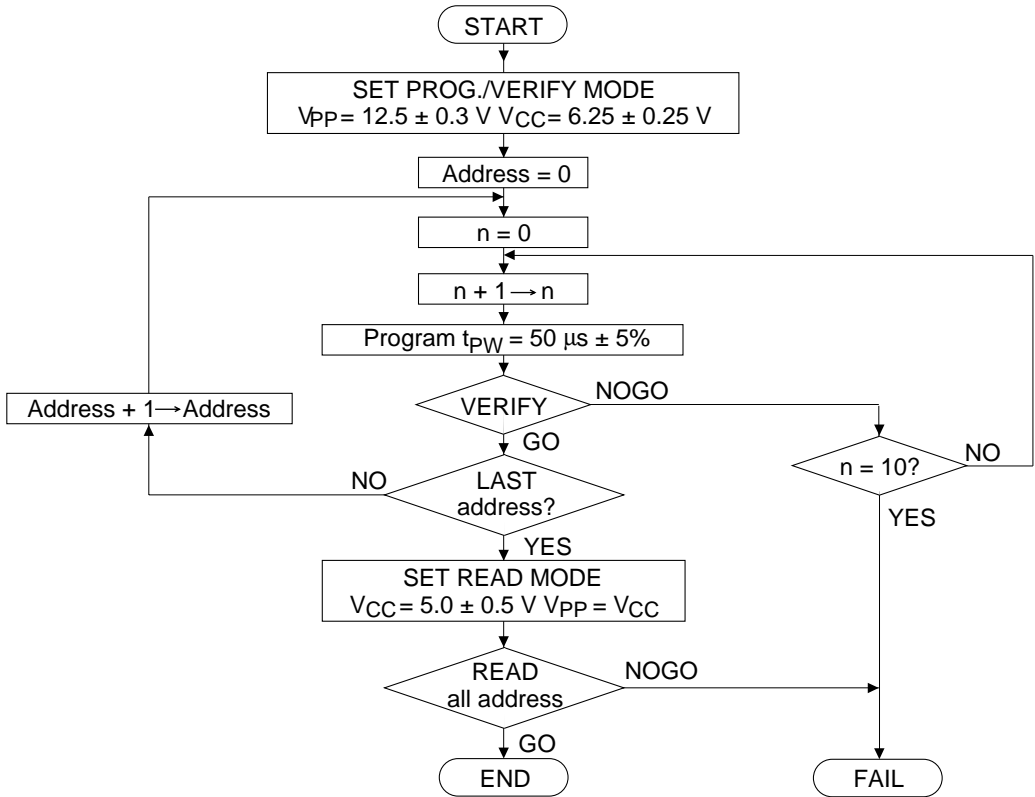
2. Page program mode will be reset when  $V_{PP}$  is set to  $V_{CC}$  or less.

## Fast High-Reliability Page Programming Timing Waveform



**Fast High-Reliability Programming**

This device can be applied the fast high-reliability programming algorithm shown in the following flowchart. This algorithm allows to obtain faster programming time without any voltage stress to the device nor deterioration in reliability of programmed data.



Fast High-Reliability Programming Flowchart

**DC Characteristics** ( $V_{CC} = 6.25 \text{ V} \pm 0.25 \text{ V}$ ,  $V_{PP} = 12.5 \text{ V} \pm 0.3 \text{ V}$ ,  $T_a = 25^\circ\text{C} \pm 5^\circ\text{C}$ )

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Input leakage current	$I_{LI}$	—	—	2	$\mu\text{A}$	$V_{in} = 6.5 \text{ V}/0.45 \text{ V}$
$V_{PP}$ supply current	$I_{PP}$	—	—	40	mA	$\overline{CE} = V_{IL}$
Operating $V_{CC}$ current	$I_{CC}$	—	—	50	mA	
Input voltage	$V_{IL}$	$-0.1^{*5}$	—	0.8	V	
	$V_{IH}$	2.2	—	$V_{CC} + 0.5^{*6}$	V	
Output voltage	$V_{OL}$	—	—	0.45	V	$I_{OL} = 2.1 \text{ mA}$
	$V_{OH}$	2.4	—	—	V	$I_{OH} = -400 \mu\text{A}$

- Notes:
1.  $V_{CC}$  must be applied before  $V_{PP}$  and removed after  $V_{PP}$ .
  2.  $V_{PP}$  must not exceed 13 V including overshoot.
  3. An influence may be had upon device reliability if the device is installed or removed while  $V_{PP} = 12.5 \text{ V}$ .
  4. Do not alter  $V_{PP}$  either  $V_{IL}$  to 12.5 V or 12.5 V to  $V_{IL}$  when  $\overline{CE} = \text{low}$ .
  5.  $V_{IL}$  min =  $-0.6 \text{ V}$  for pulse width  $\leq 20 \text{ ns}$ .
  6. If  $V_{IH}$  is over the specified maximum value, programming operation cannot be guaranteed.

**AC Characteristics** ( $V_{CC} = 6.25 \text{ V} \pm 0.25 \text{ V}$ ,  $V_{PP} = 12.5 \text{ V} \pm 0.3 \text{ V}$ ,  $T_a = 25^\circ\text{C} \pm 5^\circ\text{C}$ )

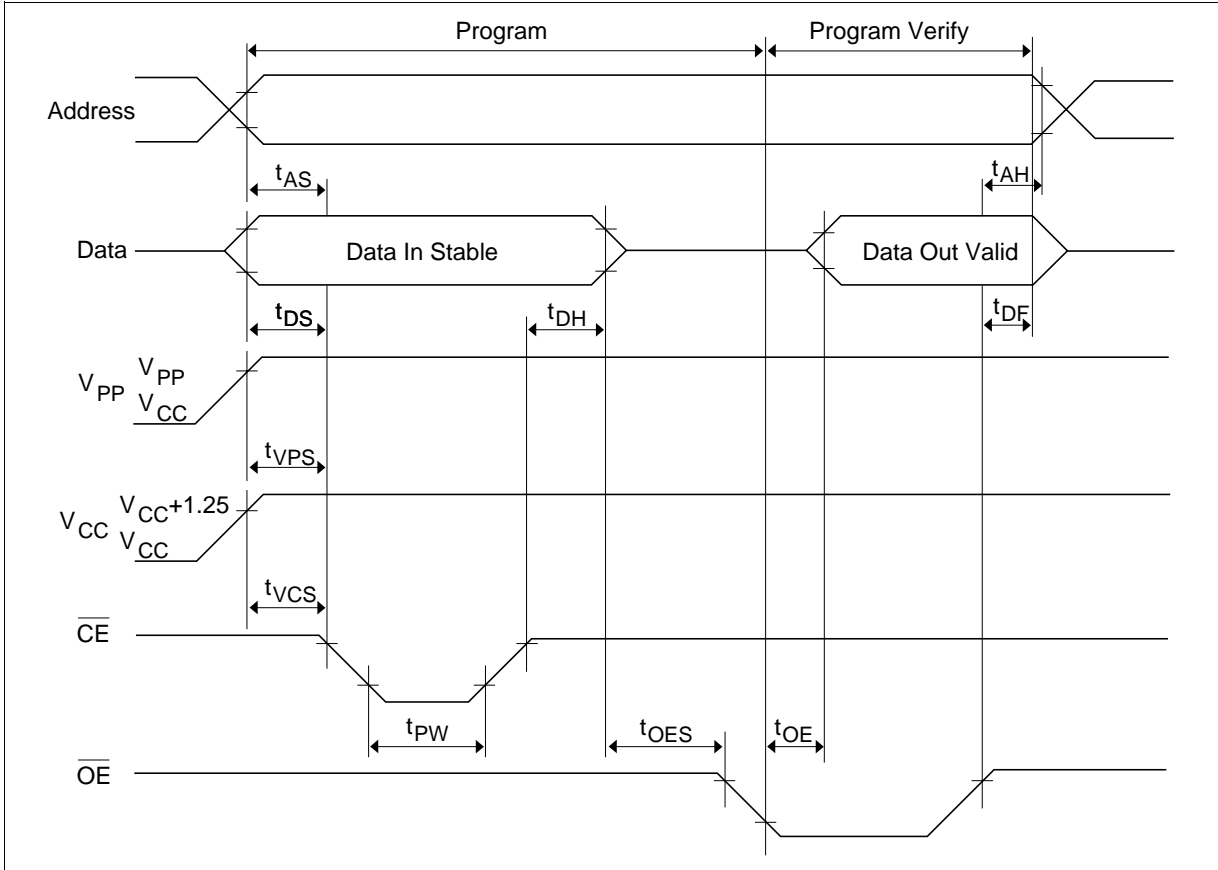
**Test Conditions**

- Input pulse levels: 0.45 to 2.4 V
- Input rise and fall time:  $\leq 20 \text{ ns}$
- Reference levels for measuring timings:  
 Inputs: 0.8 V, 2.0 V  
 Outputs: 0.8 V, 2.0 V

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Address setup time	$t_{AS}$	2	—	—	$\mu\text{s}$	
$\overline{\text{OE}}$ setup time	$t_{OES}$	2	—	—	$\mu\text{s}$	
Data setup time	$t_{DS}$	2	—	—	$\mu\text{s}$	
Address hold time	$t_{AH}$	0	—	—	$\mu\text{s}$	
Data hold time	$t_{DH}$	2	—	—	$\mu\text{s}$	
$\overline{\text{OE}}$ to output float delay	$t_{DF}^{*1}$	0	—	130	ns	
$V_{PP}$ setup time	$t_{VPS}$	2	—	—	$\mu\text{s}$	
$V_{CC}$ setup time	$t_{VCS}$	2	—	—	$\mu\text{s}$	
$\overline{\text{CE}}$ programming pulse width	$t_{PW}$	47.5	50.0	52.5	$\mu\text{s}$	
Data valid from $\overline{\text{OE}}$	$t_{OE}$	0	—	150	ns	

Note: 1.  $t_{DF}$  is defined as the time at which the output achieves the open circuit condition and data is no longer driven.

## Fast High-Reliability Programming Timing Waveform



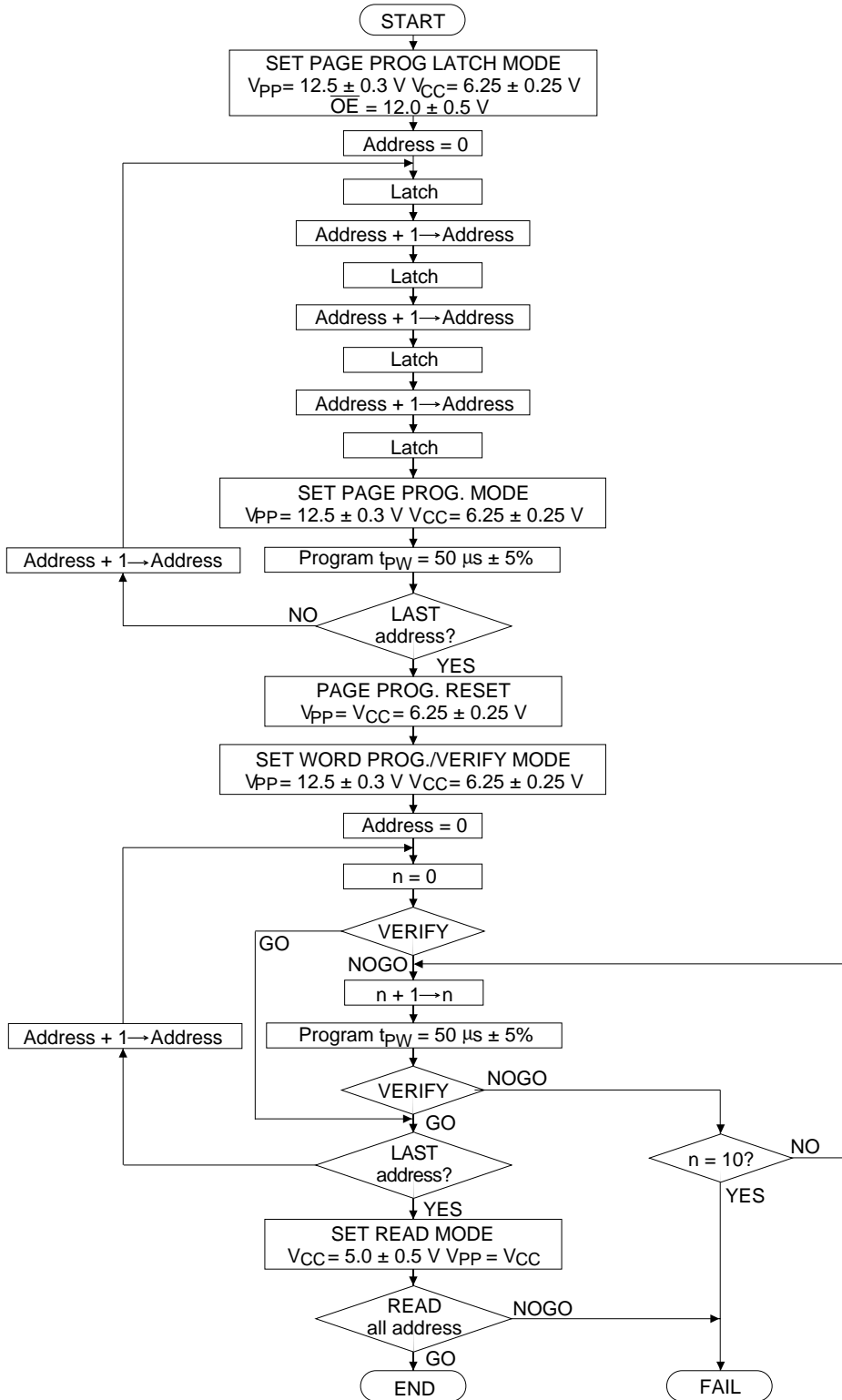
## Optional Page Programming

This device can be applied the optional page programming algorithm shown in the following flowchart. This algorithm allows to obtain faster programming time without any voltage stress to the device nor deterioration in reliability of programmed data.

This programming algorithm is the combination of page programming and word verify. It can avoid the increase of programming verify time when a programmer with slow machine cycle is used, and shorten the total programming time.

Regarding the timing specifications for page programming and word verify, please refer to the specifications for fast high-reliability page programming and fast high-reliability programming.





Optional Page Programming Flowchart

## HN27C4096AG/ACC Series

**DC Characteristics** ( $V_{CC} = 6.25 \text{ V} \pm 0.25 \text{ V}$ ,  $V_{PP} = 12.5 \text{ V} \pm 0.3 \text{ V}$ ,  $T_a = 25^\circ\text{C} \pm 5^\circ\text{C}$ )

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Input leakage current	$I_{LI}$	—	—	2	$\mu\text{A}$	$V_{in} = 6.5 \text{ V}/0.45 \text{ V}$
Output voltage during verify	$V_{OL}$	—	—	0.45	V	$I_{OL} = 2.1 \text{ mA}$
	$V_{OH}$	2.4	—	—	V	$I_{OH} = -400 \mu\text{A}$
Operating $V_{CC}$ current	$I_{CC}$	—	—	50	mA	
Input voltage	$V_{IL}$	$-0.1^{15}$	—	0.8	V	
	$V_{IH}$	2.2	—	$V_{CC} + 0.5^{16}$	V	
	$V_H$	11.5	12.0	12.5	V	
$V_{PP}$ supply current	$I_{PP}$	—	—	70	mA	$\overline{CE} = V_{IL}$

- Notes:
1.  $V_{CC}$  must be applied before  $V_{PP}$  and removed after  $V_{PP}$ .
  2.  $V_{PP}$  must not exceed 13 V including overshoot.
  3. An influence may be had upon device reliability if the device is installed or removed while  $V_{PP} = 12.5 \text{ V}$ .
  4. Do not alter  $V_{PP}$  either  $V_{IL}$  to 12.5 V or 12.5 V to  $V_{IL}$  when  $\overline{CE} = \text{low}$ .
  5.  $V_{IL} \text{ min} = -0.6 \text{ V}$  for pulse width  $\leq 20 \text{ ns}$ .
  6. If  $V_{IH}$  is over the specified maximum value, programming operation cannot be guaranteed.

**AC Characteristics** ( $V_{CC} = 6.25 \text{ V} \pm 0.25 \text{ V}$ ,  $V_{PP} = 12.5 \text{ V} \pm 0.3 \text{ V}$ ,  $T_a = 25^\circ\text{C} \pm 5^\circ\text{C}$ )

**Test Conditions**

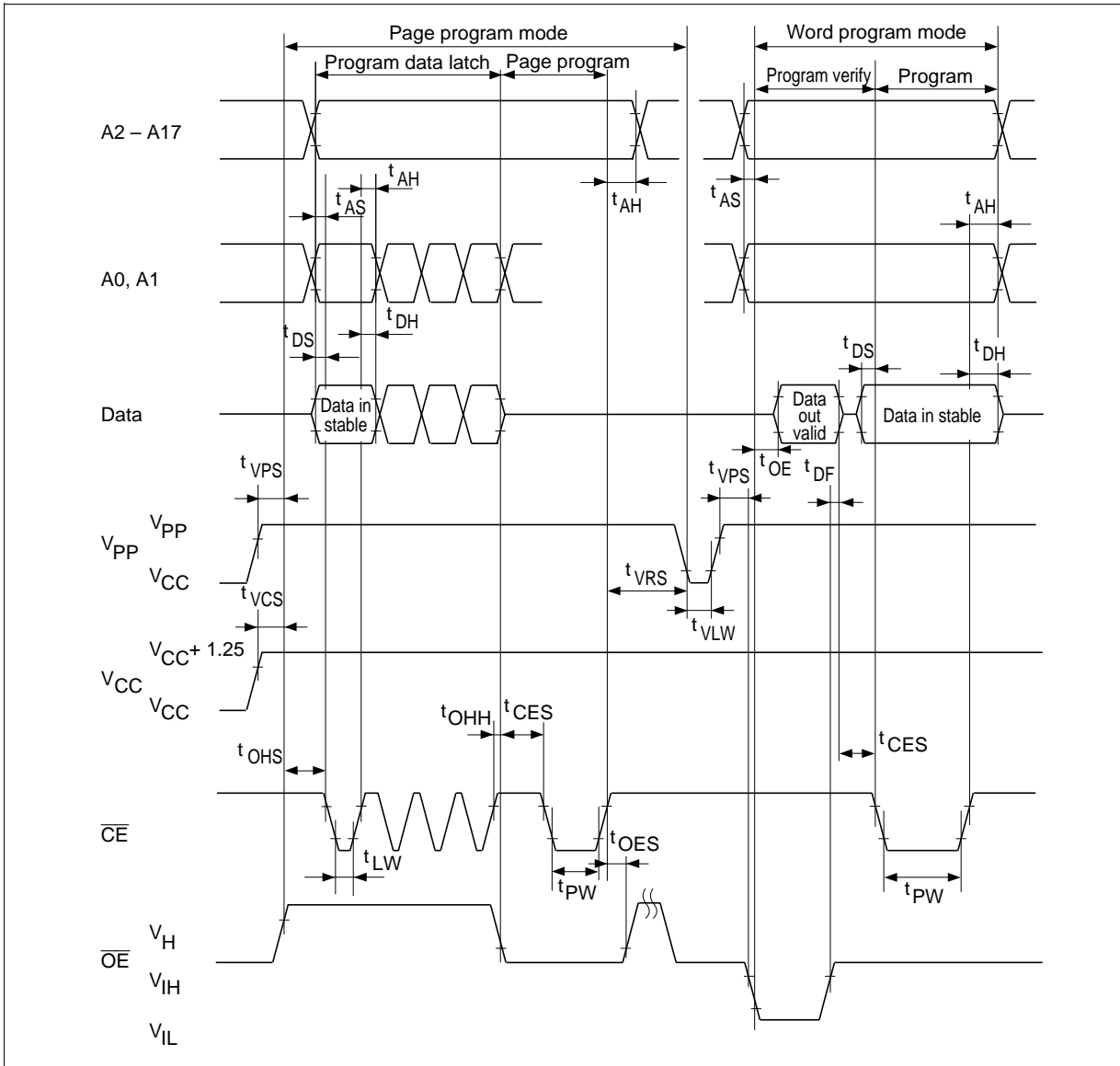
- Input pulse levels: 0.45 to 2.4 V
- Input rise and fall time:  $\leq 20 \text{ ns}$
- Reference levels for measuring timings:  
     Inputs; 0.8 V, 2.0 V  
     Outputs; 0.8 V, 2.0 V

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Address setup time	$t_{AS}$	2	—	—	$\mu\text{s}$	
$\overline{OE}$ setup time	$t_{OES}$	2	—	—	$\mu\text{s}$	
Data setup time	$t_{DS}$	2	—	—	$\mu\text{s}$	
Address hold time	$t_{AH}$	0	—	—	$\mu\text{s}$	
Data hold time	$t_{DH}$	2	—	—	$\mu\text{s}$	
$\overline{OE}$ high to output float delay	$t_{DF}^{*1}$	0	—	130	ns	
$V_{PP}$ setup time	$t_{VPS}$	2	—	—	$\mu\text{s}$	
$V_{CC}$ setup time	$t_{VCS}$	2	—	—	$\mu\text{s}$	
$\overline{CE}$ initial programming pulse width	$t_{PW}$	47.5	50.0	52.5	$\mu\text{s}$	
$\overline{CE}$ setup time	$t_{CES}$	2	—	—	$\mu\text{s}$	
Data valid from $\overline{OE}$	$t_{OE}$	0	—	150	ns	
$\overline{CE}$ pulse width during data latch	$t_{LW}$	1	—	—	$\mu\text{s}$	
$\overline{OE} = V_H$ setup time	$t_{OHS}$	2	—	—	$\mu\text{s}$	
$\overline{OE} = V_H$ hold time	$t_{OHH}$	2	—	—	$\mu\text{s}$	
Page programming reset time <sup>*2</sup>	$t_{VLW}$	1	—	—	$\mu\text{s}$	
$V_{PP}$ hold time <sup>*2</sup>	$t_{VRS}$	1	—	—	$\mu\text{s}$	

Notes: 1.  $t_{DF}$  is defined as the time at which the output achieves the open circuit condition and data is no longer driven.

2. Page program mode will be reset when  $V_{PP}$  is set to  $V_{CC}$  or less.

## Option Page Programming Timing Waveform



## Erase

Erasure of the HN27C4096AG/ACC is performed by exposure to ultraviolet light of 2537 Å and all the output data are changed to “1” after this erasure procedure. The minimum integrated dose (i.e. UV intensity X exposure time) for erasure is  $15 \text{ W} \cdot \text{sec}/\text{cm}^2$ .

## Mode Description

### Device Identifier Mode

The device identifier mode allows the reading out of binary codes that identify manufacturer and type of device, from outputs of EPROM. By this mode, the device will be automatically matched its own corresponding programming algorithm, using programming equipment.

### HN27C4096A Identifier Code

	A0	I/O8 – I/O15	I/O7	I/O6	I/O5	I/O4	I/O3	I/O2	I/O1	I/O0	
	CC-44 (24)	(11 – 4)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	
Identifier	DG-40A (21)	(10 – 3)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	Hex Data
Manufacturer code	$V_{IL}$	X	0	0	0	0	0	1	1	1	07
Device code	$V_{IH}$	X	1	0	1	0	0	0	1	0	A2

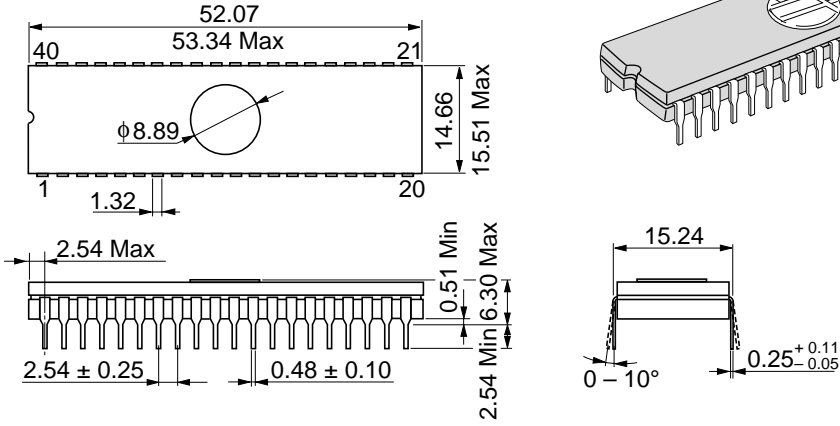
- Notes: 1.  $V_{CC} = 5.0\text{ V} \pm 10\%$   
 2.  $A9 = 12.0\text{ V} \pm 0.5\text{ V}$   
 3.  $A1 - A8, A10 - A17, \overline{CE}, \overline{OE} = V_{IL}$   
 4. X: Don't care.

# HN27C4096AG/ACC Series

## Package Dimensions

HN27C4096HG Series (DG-40A)

Unit: mm



HN27C4096HCC Series (CC-44)

Unit: mm

